

THE SWEET LIFE OF BEEKEEPING • GAMES, JOKES, & MORE!

National Wildlife Federation®

Ranger Rick®

**MUD-LOVING
ANIMALS**

**COTTON-TOP
MONKEYS**

**YUMMY
BUG BITES**

June/July 2017

\$4.99US



AMAZING RAYS



- 4 Reader Mail**
- 4 Photographer of the Year**
- 5 Reader Riddles**
- 6 Rays (Fish)**
- 12 The Buzz (Nature News)**
- 14 How Animals Use Mud**
- 20 Recipes: Bug "Bites"**
- 22 Adventures of Ranger Rick: Stop That Drone!**
- 25 Ask Rick**
- 26 Cotton-Top Tamarins (Monkeys)**
- 30 Beekeeping**
- 37 Game Pages**



WATCH IT!



DUELING NECKS

Don't be fooled: These giraffes are *not* snuggling. They are two males knocking necks in a fierce fight.

ABOUT THE COVERS

Front: A coral reef is a good place to find a *reef manta ray*. Meet many more kinds of rays on pages 6–11.

PHOTO BY DOUG PERRINE/SEAPICS.COM

Back: A *red ovenbird* inspects its work. Once this mud nest is finished and dried, it will be a hard, safe place for raising babies. See how other animals use mud on pages 14–19.

PHOTO BY JOANNE WILLIAMS/DANITADELIMONT.COM

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Dear Ranger Rick,

GOT MUD?

When I was a kid, my family went on a wild river-rafting adventure through the Grand Canyon. My sister wrote a story about it for the July 1999 issue of *RANGER RICK*. After I grew up, I went back to visit the same river and took my old copy of *RANGER RICK* with me. That's a picture of me covered in river mud on the back cover (right). What a great memory!

Jacob Roland, Louisiana

SLUG-ISH SURPRISE

I was rollerblading one day when I thought I saw a little stick on my driveway. I took a closer look and realized it was a slug! I'm so glad I didn't run over it!

Lissa K., Michigan

HE'S A WINNER!



MARTHA ALICIA SALAZAR

Congratulations to Claudio Contreras Koob, the winner of our 2016 Ranger Rick Photographer of the Year Award! Claudio has spent the last 25 years traveling around his country, Mexico, and photographing the amazing and



C.C. LOCKWOOD

Rangers: Look for more kids—but mostly animals—covered in mud on pages 14–19.

—R.R.

SHOW US!

On pages 20–21, you'll find out how to make some fruit and vegetable "insects." We'd love to see your buggy creations! Send your photos to Ranger Rick; 11100 Wildlife Center Dr.; Reston, VA 20190.



diverse wildlife there. Do you remember the "Flamingo Roundup" article in our February 2016 issue? Claudio took all of the flamingo photos in that story while he was visiting Mexico's Yucatán Peninsula. His favorite moment from that trip was when he was lying on the ground, camouflaged by a blanket. The birds weren't aware he was taking pictures of them. Claudio told us, "I could hear their chattering noise as they started coming my way. The flock surrounded me and one even stepped on top of me. I felt its feet on my back!"

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RATE THIS ISSUE

What do you think about this month's issue of *Ranger Rick*? Scan this QR code or visit online at nwf.org/rangerrick to take our survey.



Reader Riddles

What's a cat's favorite kind of pudding?

Tabby-oca.

Maya F., New Jersey

What do you call a group of apes playing Twister?

An orangu-tangle.

Elsie W., Colorado

What do naughty chickens lay?

Deviled eggs.

Bishop A., Connecticut

Where does an owl stay on vacation?

In a hoot-el.

Crissy J., Oregon

What did the Dalmatian say after eating a tasty meal?

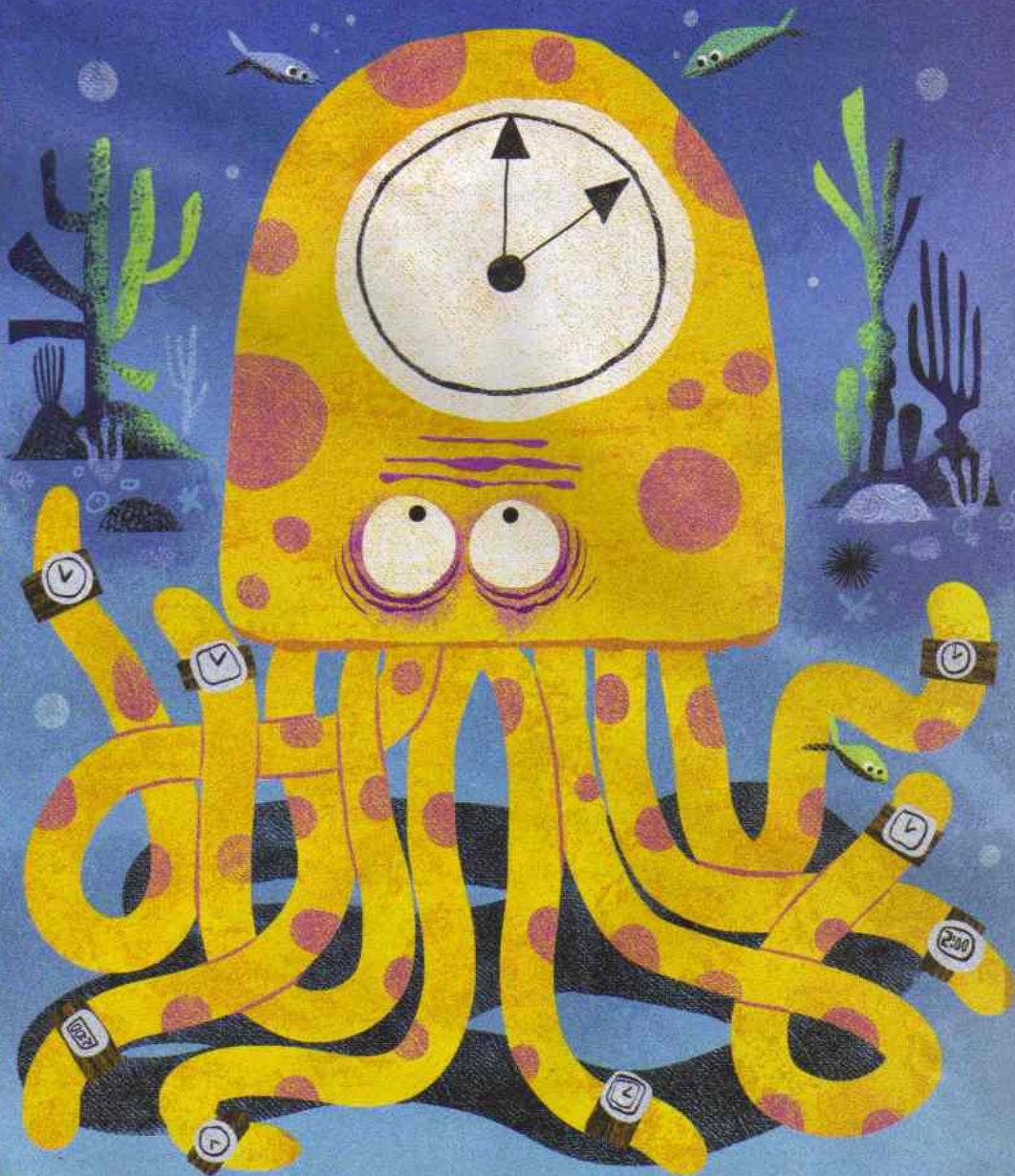
"That really hit the spot!"

Connor G., Ohio

What sea creature can tell time?

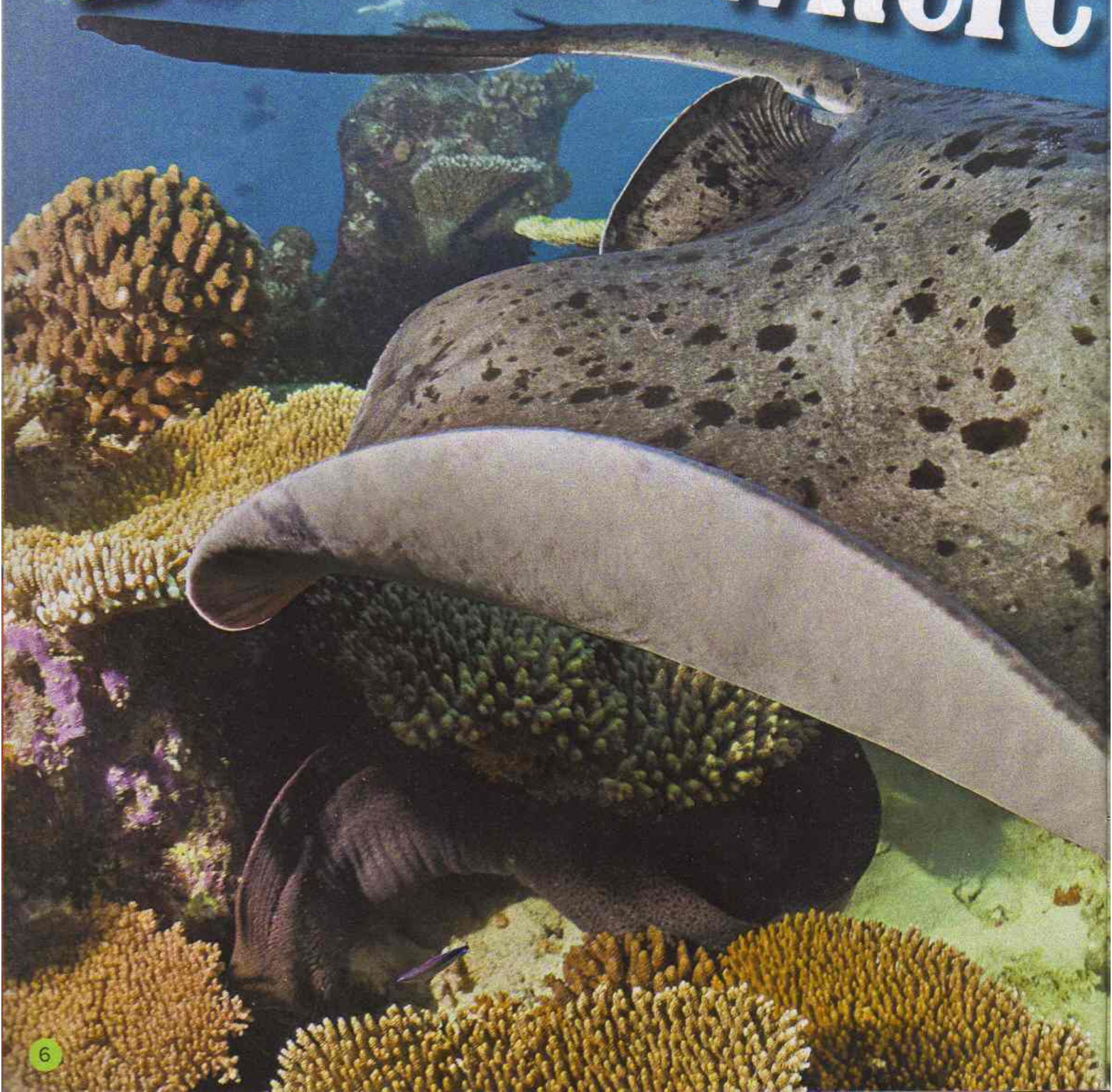
A clock-topus.

Emmett B., New York



WANT TO JOIN THE FUN? Send your favorite nature riddle with your full name and address to *Reader Riddles; Ranger Rick; 11100 Wildlife Center Dr.; Reston, VA 20190-5362*; E-mail: rick@nwf.org. We like reading all the riddles from our readers. We're sorry, but there's room to print only some of them. All submissions become the property of the National Wildlife Federation.

FLAT *is where*





it's at!

Check out this ray, flapping its way across a reef. A pancake-shaped body might seem strange to you, but for a ray, it's flat-out fantastic!

BY KATHY KRANKING

So, what exactly is a ray?

A ray is a kind of fish.

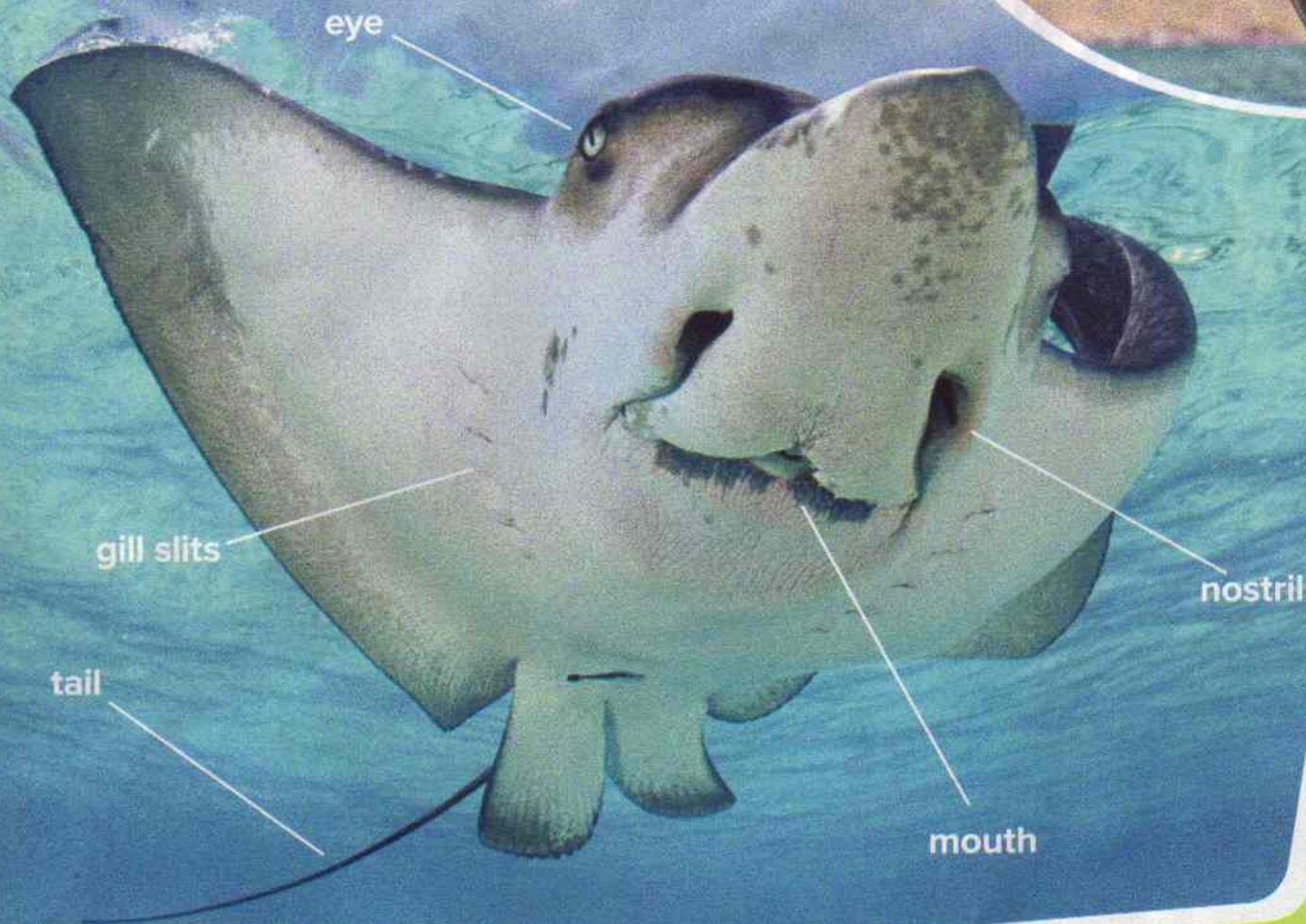
Rays are very close cousins of sharks. As a matter of fact, if you could flatten out a shark with a rolling pin, you'd have a ray! (Almost, anyway.)

There are about 630 species of rays, and, though some of them live in freshwater, most live in the ocean. Depending on the species, rays are found in cold waters, warm waters, along coasts, or far offshore.

A flat body works great for the way most rays live. To find out why, turn the page!

A round ribbontail ray glides over a coral reef, flapping its side fins like wings.

Rays sometimes jump right out of the water, as the *mobula* (MAH-byoo-luh) ray at right is doing. Scientists don't know for sure why a ray jumps. But some reasons may be to attract a mate or to get rid of tiny pests on its skin.



From the bottom, this *spotted eagle ray* seems to have a funny face. But the “face” is really just the ray’s nostrils and mouth.

Built for the Bottom

A ray spends a lot of time on the ocean floor, so its flat body comes in very handy. The ray can lie there, partly buried in sand, and be hidden from enemies as well as from prey it may snatch. Its eyes

are on the top of its body, so it can still see what’s going on when the rest of its body is buried.

The ray’s mouth, though, is located on the bottom of its body. So the ray can easily hunt by gliding its flat body along the bottom, gobbling up clams, oysters, shrimp, and other prey as it goes. Rays also hunt by using their wing-

like fins to stir up sand on the bottom. Then they gobble up uncovered prey. Most rays have rows of flat teeth for crushing their crunchy food.

Breathin’ Easy

A ray’s body plan also works great when it comes to breathing. Most fish get oxygen from water as it flows through their mouths and then back out through their gills. But if a

DOUG PERRINE/NATUREPL.COM ©; CHRISTOPHER SWANN/SEAPICS.COM (INSET)

ray breathed through its mouth when it was buried, it would get a mouthful of sand! So instead, it draws water in through two openings on the top of its body, called *spiracles* (SPEER-uh-kuhlz). (You can see a spiracle behind the eye of the ray on pages 6–7.) As water flows into a ray's spiracles, the ray absorbs oxygen from the water. Then the water goes back out through the ray's gill slits, which are on the bottom of its body (see photo at left).

Big Mouths, Tiny Food

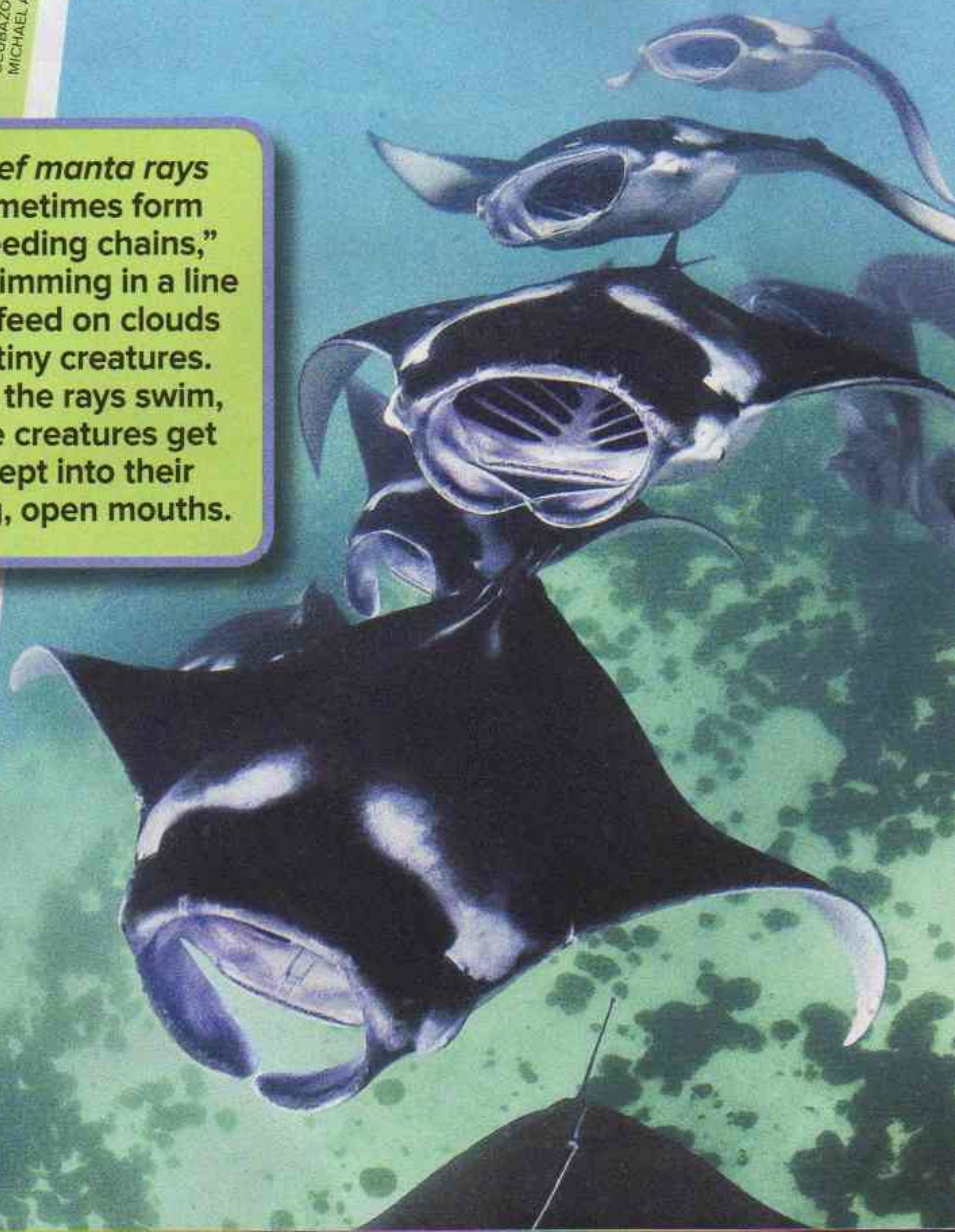
Some kinds of rays spend more time swimming around in open water rather than lying on the bottom. A number of these free-swimmers will gobble up fish as they swim and also search for food such as shrimp or clams on the bottom. But other free-swimmers eat only *plankton*, tiny creatures that drift along in the water. Plankton-eating rays have their big, wide mouths at the front of their bodies—the better for sucking in lots of plankton as the rays swim along. And plankton-eaters usually breathe through their mouths rather than through spiracles.



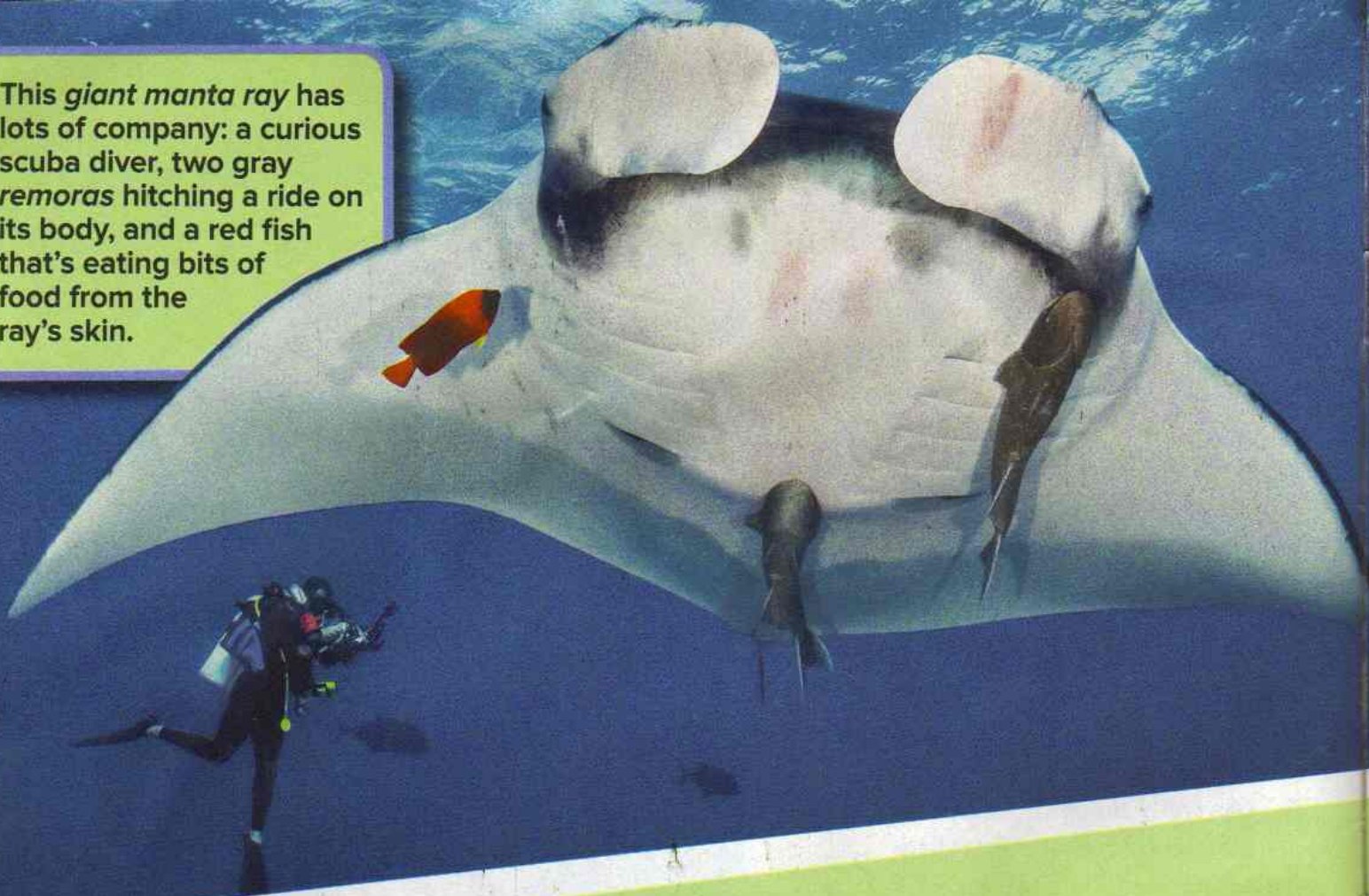
This *marble ray* is eating a fishy meal. It uses special sensors around its mouth to help it zero in on prey.

SCUBAZOO/SCIENCE SOURCE (T) ©,
MICHAEL AW/SEAPICS.COM (B)

Reef manta rays sometimes form “feeding chains,” swimming in a line to feed on clouds of tiny creatures. As the rays swim, the creatures get swept into their big, open mouths.



This *giant manta ray* has lots of company: a curious scuba diver, two gray *remoras* hitching a ride on its body, and a red fish that's eating bits of food from the ray's skin.



An Array of Rays

When people hear the word "ray," they often think of stingrays. Stingrays have venomous barbs at the base of their tails. If they feel threatened, they can give a painful sting. But stingrays are just

one of many families of rays. Most rays are completely harmless.

Rays come in different sizes, shapes, and colors. (See the variety of rays **below**.) The smallest ray is the size of a pancake. And the largest is so big that three grownups could lie head-to-toe across

its back with room to spare! That's the famous *giant manta ray*. This big ray has a big mouth, but it eats tiny plankton—sometimes as much as 60 pounds a day. Like other plankton-eating rays, mantas have flipper-like fins that they use to channel food toward their mouths.

Pretty RAYS All in a Row

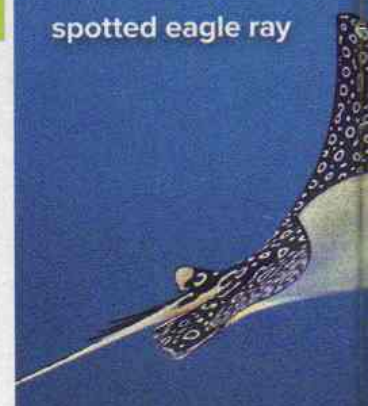
Atlantic stingray



southern eagle ray




spotted eagle ray



LUIS JAVIER SANDOVAL/V&W/SEAPICS.COM (10T); D.R. SCHRICHTE/SEAPICS.COM (10BU) ©; DOUG PERRINE/SEAPICS.COM (10BC) ©; 10-11B); JEFF ROTMAN (11TR); DAVID FLEETHAM/TOM STACK & ASSOC. (11M); STEPHEN KAJIURA/SEAPICS.COM (11BC) ©; KEVIN DEACON/MINDEN PICTURES (11BR)

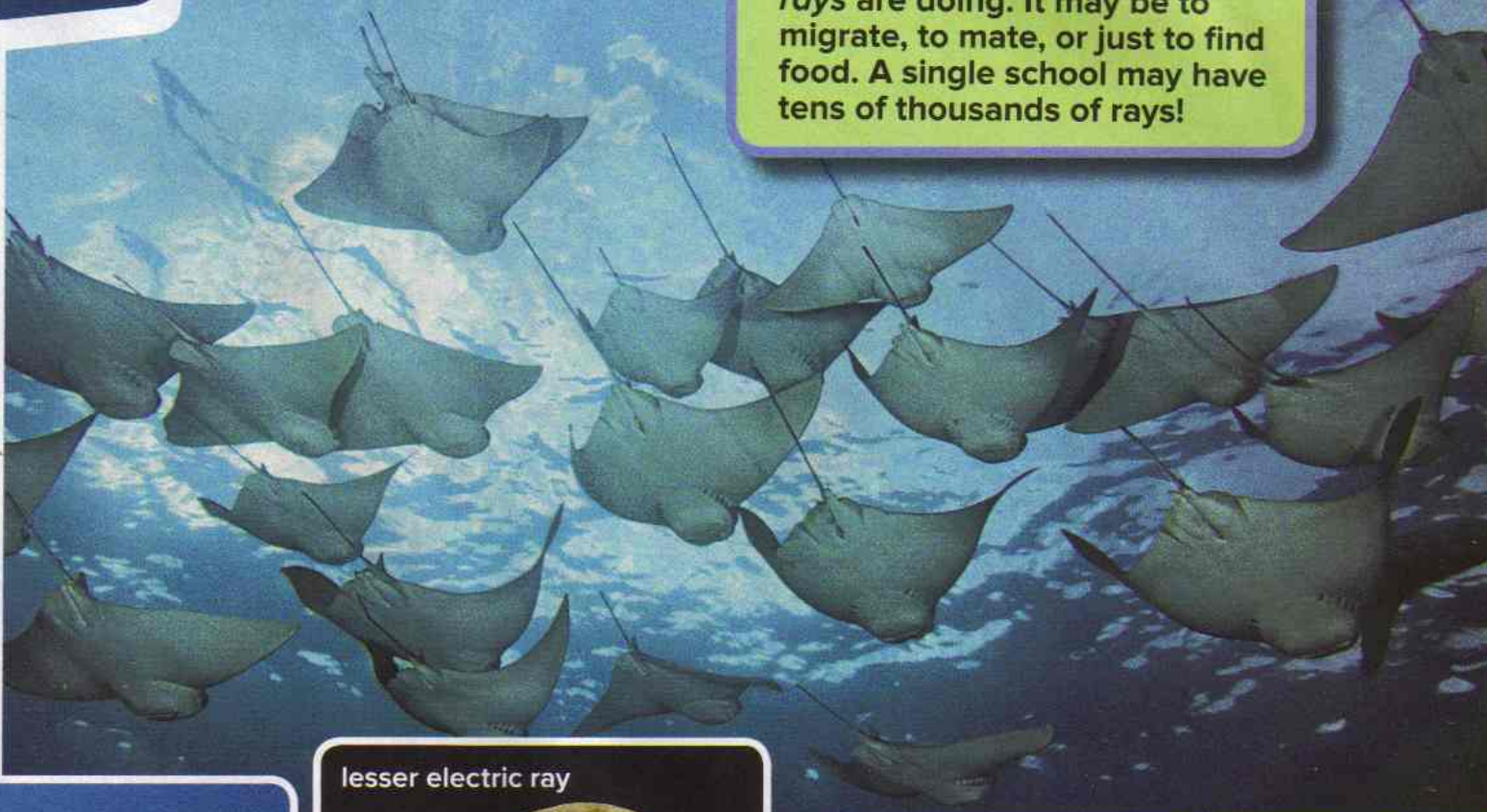
Baby Flatties

Some kinds of fish hatch from eggs, and some kinds come out live from their mothers. Rays do both! After mating, a female ray has an egg (or eggs, depending on the species) inside her body, in which a baby ray grows. When the time is right, the baby hatches from the egg inside the mom. It continues growing, and then later the mom pushes the baby out of her body. The new ray swims off to begin life on its own! 

A yellow stingray is giving birth to two babies at the same time! See their tails?



Rays sometimes gather in big schools—just as these cownose rays are doing. It may be to migrate, to mate, or just to find food. A single school may have tens of thousands of rays!



lesser electric ray



southern fiddler ray



the

BUZZ

BY HANNAH SCHARDT



the AMAZING SPIDER-DAD

When it comes to caring for their young, most male spiders are pretty hands-off. Or is it legs-off? But one small South American spider could probably win Father of the Year.

Most spider dads leave for good as soon as their mates' eggs are fertilized. But this dad weaves his own web right above his mate's. From there, he keeps an eye out for any predators that might want to snack on her sac of eggs. He also makes regular visits to his mate's web to clean and repair the area around the sac. By the time the spiderlings hatch, Mom may have already moved on, leaving Dad to do all the work around the web. Happy Father's Day to the best spider dad around!



SPIDER ART BY DAVE CLEGG, ALL BEE ART BY DANIELLE JONES



"Bees" of the Sea

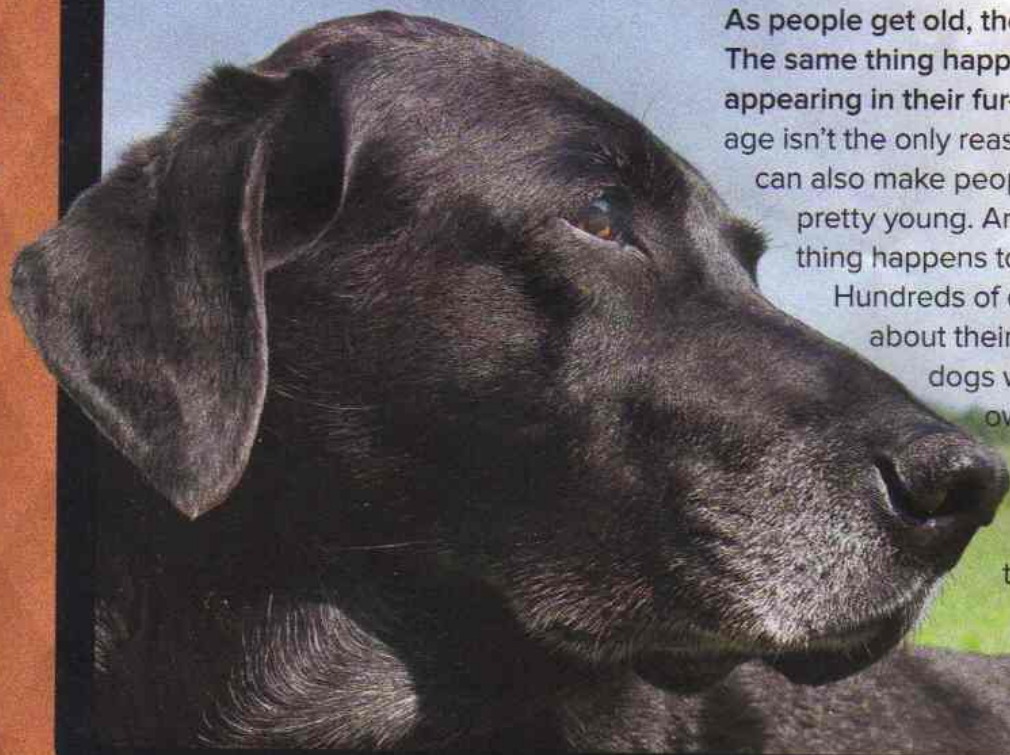
If you hear the word "pollinator," what do you think of? Maybe a bee, buzzing from flower to flower? You probably don't picture a tiny, shrimp-like critter swimming around in the ocean.

But just as the flowers in your garden are pollinated by animals, so are some seagrasses. People used to think that seagrass pollen spread from plant to plant only

through water movement. Then scientists noticed that tiny, shrimp-like *crustaceans* (kruh-STAY-shuns) were visiting the flowers on undersea plants called turtle grass—and carrying away bits of pollen on their bodies, just as bees do in a garden.

Back at their lab, the scientists added seawater containing the tiny animals to an aquarium full of turtle grass. You can probably guess what happened next: Within a few minutes, the crustaceans had moved pollen grains from flower to flower. Bees of the sea, indeed!

"SALT-AND-PEPPER" PUPS



As people get old, their hair usually turns white or gray. The same thing happens to dogs: White hairs begin appearing in their fur—especially on their muzzles. But age isn't the only reason for gray hair. Stress and worry can also make people go gray when they are still pretty young. And now researchers think the same thing happens to stressed-out pups.

Hundreds of dog owners filled out surveys about their pets' personalities. (Only young dogs were included in the study.) The owners rated their dogs on how scared they were of new people, other dogs, and loud noises. Then the researchers compared the surveys to photos of the dogs. They found the most anxious pups also tended to have the whitest muzzles.

ANGELA HAMPTON/FLPA/MINDEN PICTURES (T); NATURAL LEARNING INITIATIVE (M, B)

PLAYGROUNDS OF THE FUTURE?

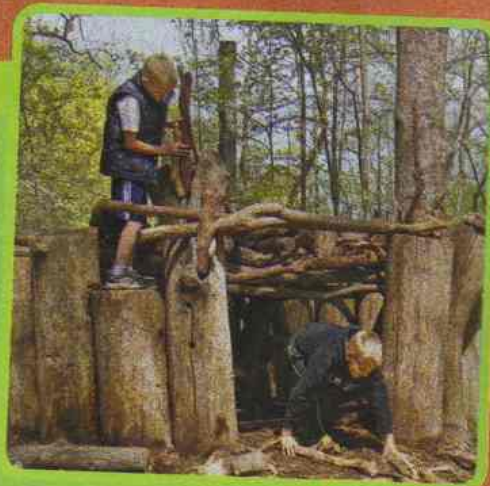
When you go out for recess or head to a park to play, you might expect to see a jungle gym, a swing set, or maybe a seesaw.

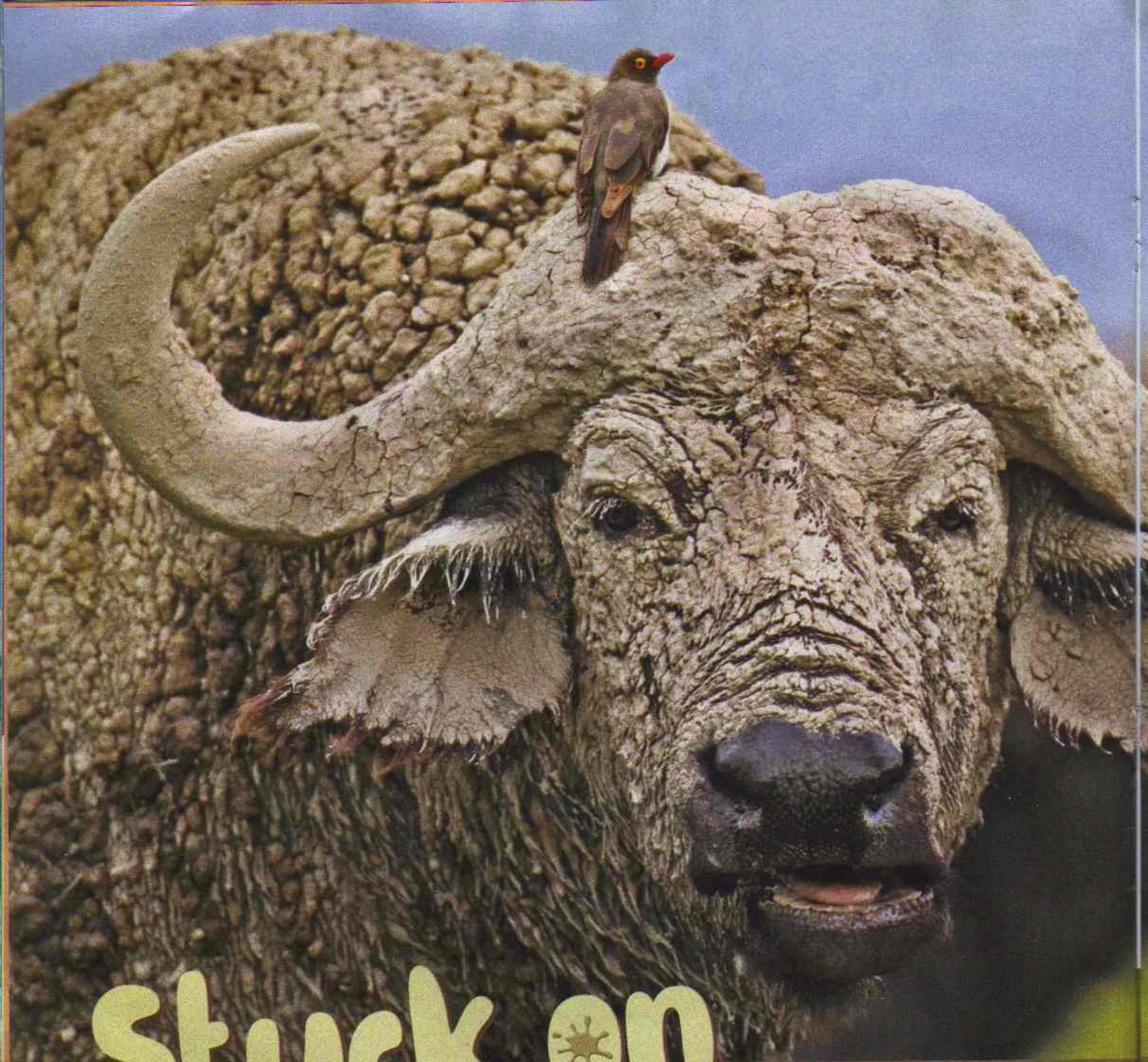
Now check out the play spaces at **right**. You might not even recognize them as places meant for play. But look closely: There are rocks to climb on, sticks to build with, and even a creek to splash in! These could be the "playgrounds" of the future, and here's why: Scientists found that kids get more exercise and use more imagination when they play in natural play areas than when they play only on regular playgrounds.

There are dozens of such play

areas across the country. And the National Wildlife Federation, the group that publishes *Ranger Rick*, has a new plan to create more of them in Colorado schools, parks, and daycare centers. These play areas feature plants that provide food and shelter for wildlife. Some also include gardens that grow healthy food for people. And all of them let kids explore and enjoy nature.

The program is starting off in Colorado. But the idea is catching on across the country. So a nature-based play space could be coming to a school, park, or daycare center near you!

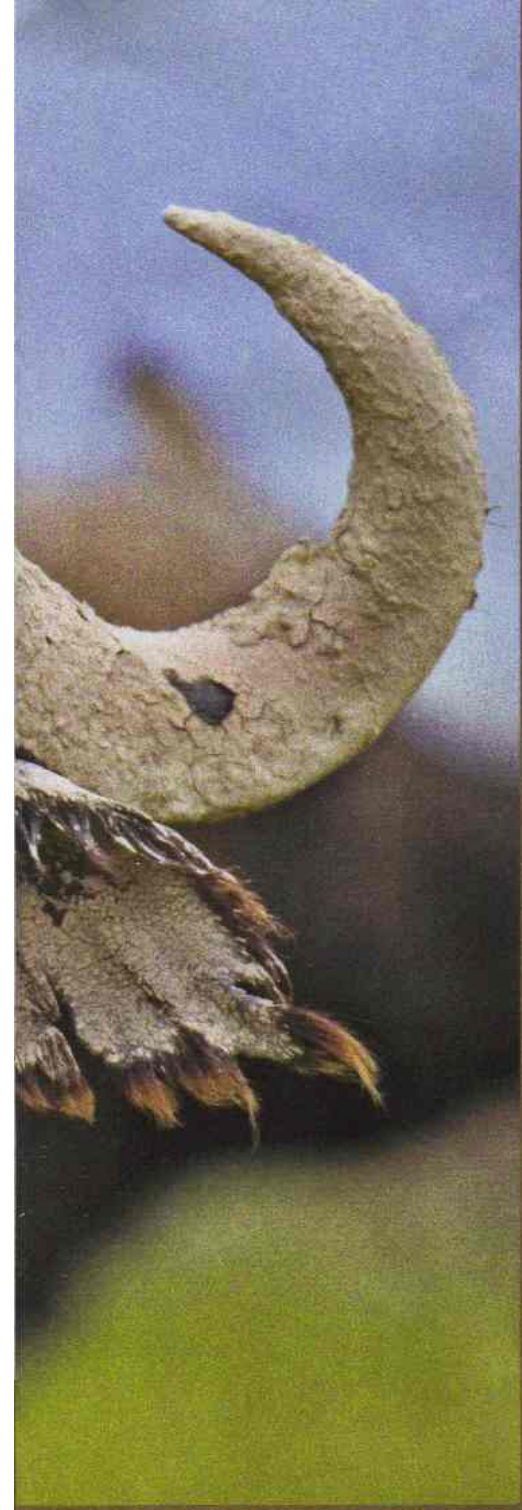




Stuck on MUD

BY KATE HOFMANN





Mud is good for building.

While this *red swamp crayfish* dug a burrow, pellets of mud piled up to form a chimney above the entrance. The crayfish spends the day inside the cool, wet burrow, coming out at night to hunt for food.

Mud! It's squishy and sticky, gooey and gloppy, mucky and messy—and nothing could be nicer for the mud-loving animals you're about to meet.

Some of them get right in and wallow, wading and rolling until they're covered from head to tail. That's how the Cape buffalo at **far left** got its mud mask. But it's not a beauty treatment. The mud covers its whole body and keeps the buffalo cool in the hot African sun. Plus, when the mud dries and flakes off, it takes along any ticks and insects that are bugging the buffalo.

But that's just the beginning. Jump on in to find more reasons to love mud!



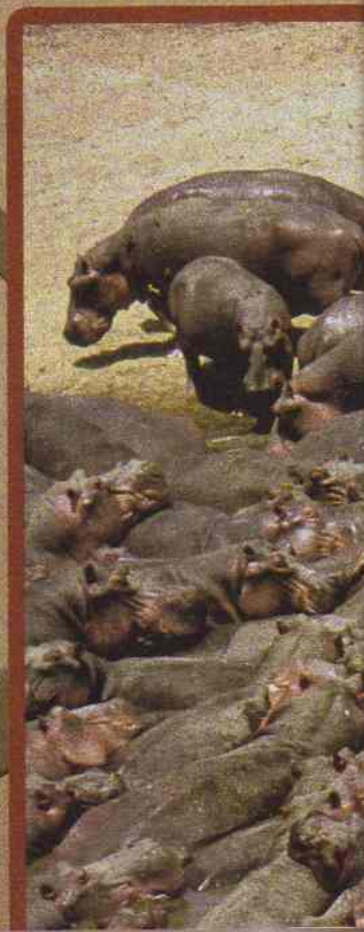
Mud has minerals. Why are these *sulphur butterflies* hanging out in mud? It's called "puddling," and they do it to slurp up salts and other minerals and nutrients that they need.

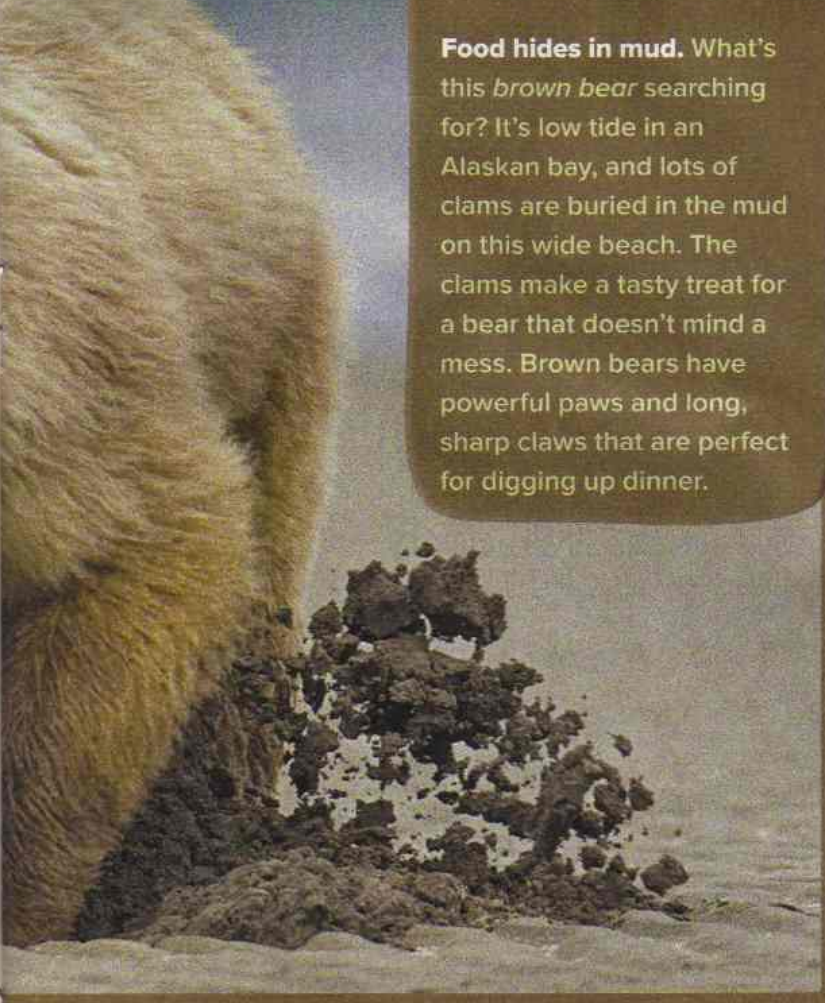


Mud means mating time.

A *spadefoot toad* buries itself underground to keep its skin moist during the desert's long dry season. When rain finally comes, the toad pops out into the muddy world to find a mate.

Mud blocks
the sun. This baby *African*
elephant is enjoying a nice,
muddy wallow during a rainstorm. An
elephant's skin may look thick and leathery.
But it is actually quite thin and sensitive.
Elephants—especially babies—can easily get
sunburned. That's why elephants love mud. A
thick coat of mud works as sunscreen, protecting
their skin from the sun's strong rays. It also helps
elephants stay cool
and comfortable.






Food hides in mud. What's this *brown bear* searching for? It's low tide in an Alaskan bay, and lots of clams are buried in the mud on this wide beach. The clams make a tasty treat for a bear that doesn't mind a mess. Brown bears have powerful paws and long, sharp claws that are perfect for digging up dinner.



Mud can be a cozy home. A *fiddler crab* lives in a salt marsh or on a muddy beach. It digs a burrow for itself in the mud and hides inside during high tide. When the tide is low, it pops out to search for food and mates. A male fiddler, such as the one above, has one large claw and one small one. He waves his big claw to attract a female to his mud burrow.



Mud keeps skin healthy. Like elephants, *hippopotamuses* have sensitive skin. They spend their days underwater, with only their eyes, ears, and nostrils sticking out. That's how they avoid the sun and keep their skin from drying out. But at the end of the dry season, water holes shrink and become mud holes. Hippos have to crowd together and wallow in the mud to protect their skin. Make room for more mud-bathers, everybody!



Mud makes nice nests. The birds at left are *black-browed albatrosses*—parent and chick. Albatrosses spend most of their lives out at sea, but they return to land to build their large, bowl-shaped nests out of mud. The fuzzy chick will stay in its mud nest until it is ready to soar away on its own.

The *wasp* below also makes her nest from mud. Bit by bit, she collects mud to build the walls of a long tube. Later she will lay an egg deep inside the tube.



Mud is fun. Animals aren't the only ones that love mud. Kids do, too! These kids look happy to be mucking around in some gloopy, soupy goo. Would you like to try this?

Since long-ago times, people have used mud in many of the same ways animals do. They smear on mud as sunscreen. They bathe in mud or cover their faces with mud masks for the health of their skin. Some even build homes out of mud!



Happiness is a mud puddle. Did you know that pigs don't sweat? Wallowing in mud is how they cool down and stay comfortable. Sometimes people say "happy as a pig in mud." It means someone is blissfully content, and you can see where it comes from: The pig **below** sure looks pleased!

A pig might be the first animal you think of when mud comes to mind. But now you know why lots of other animals love mud, too! 🐷



BUG BITES

BY MICHELE REYZER; PHOTOS BY MARK GODFREY

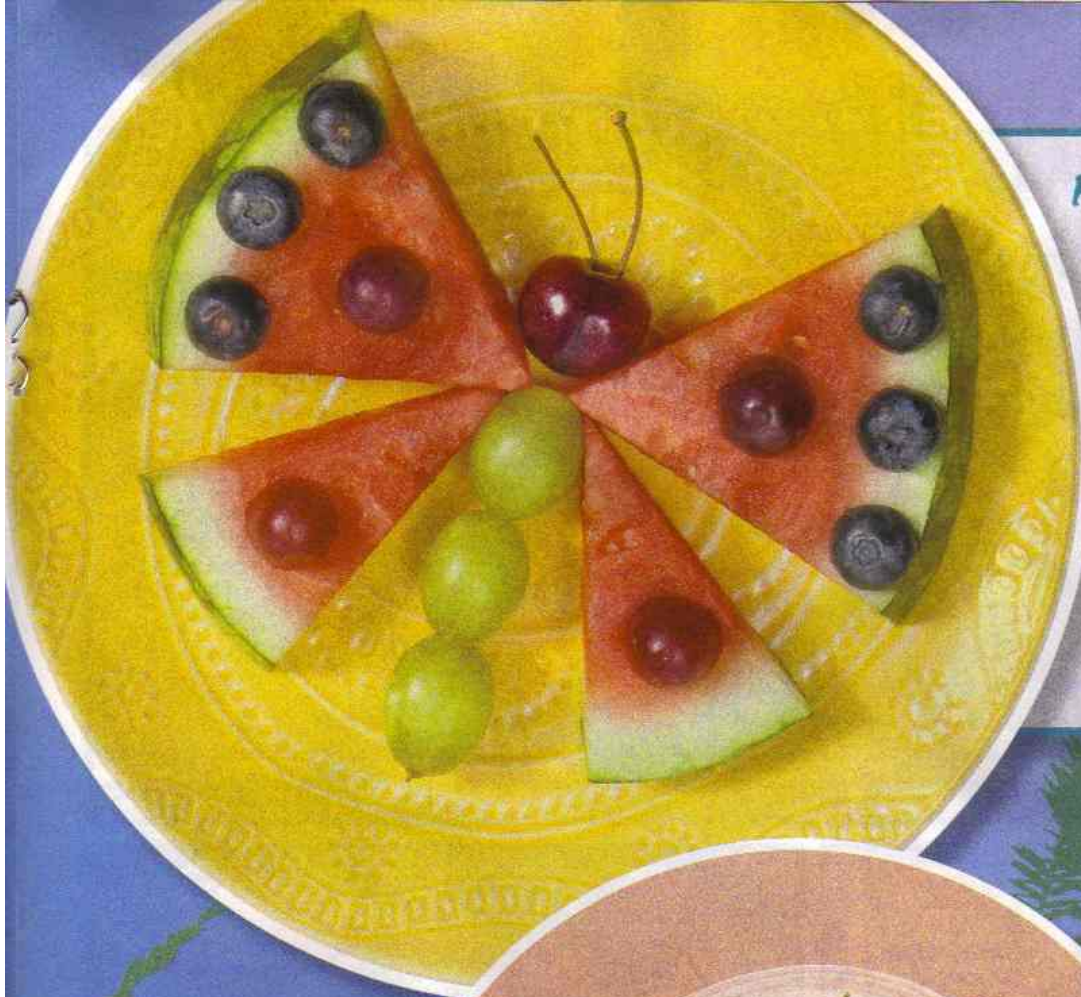
Do you love bugs? Then you'll have lots of fun making—and eating—these tasty treats. *Bug appétit!*

DRAGONFLY DISH

With an adult's help, cut four wing shapes from **cantaloupe** and four wing shapes from **honeydew melon**. Arrange them on a plate, as shown. Place a column of **blueberries** between each set of wings. For the sun, add half an **orange slice** surrounded by strips of **orange rind**. If you want, add **cauliflower clouds** to the scene.

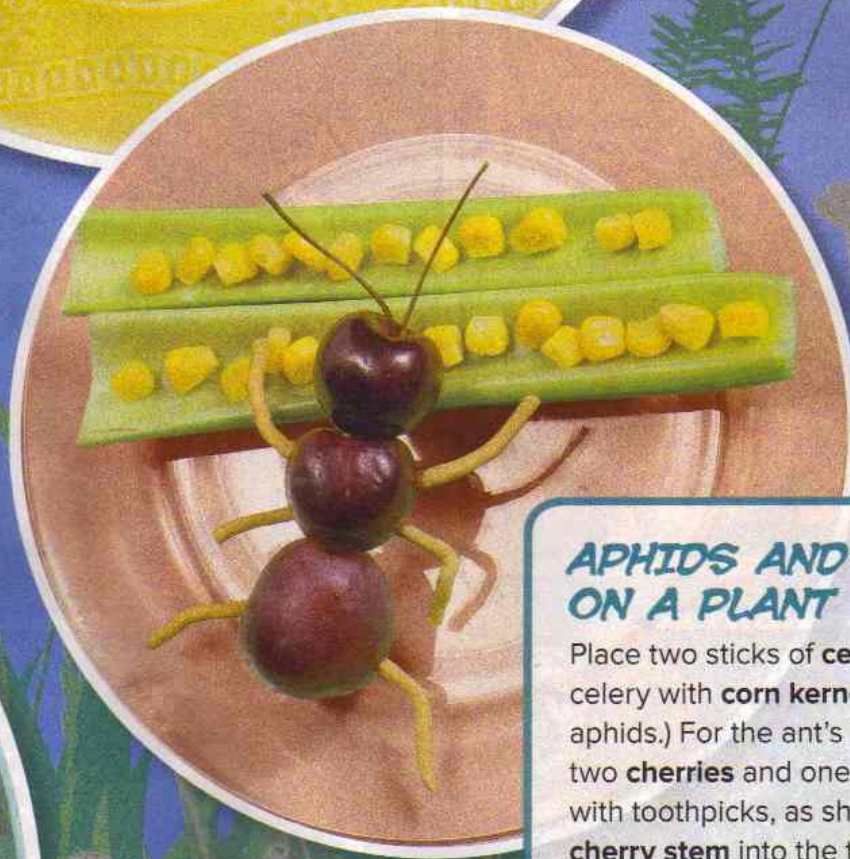
PEAS-FUL PRAYING MANTIS

Place a large **snow pea pod** in the center of your plate. For the legs, tuck two smaller pea pods underneath. Cut off both ends of another pod and place these pieces below each leg, as shown. To create spiky spines, snip small notches in the legs with scissors. Add a triangle-shaped **green pepper** head. Cut two eye circles and two antenna strips from another pea pod, then arrange them as shown. Set two **peas** on the eye circles. Place **lettuce** around the mantis. To create the sun, use a round **carrot slice** and **shredded carrots**.



FRUIT FLY

For the head and body, place one **cherry** and three **grapes** on a plate, as shown. Add four triangle-shaped slices of **watermelon** to create wings. Cut two **grapes** and three **blueberries** in half. Arrange them on the watermelon wings. For antennae, use a toothpick to push an extra **cherry stem** into the top of the head.



APHIDS AND ANT ON A PLANT

Place two sticks of **celery** on a plate. Fill the celery with **corn kernels**. (These are the aphids.) For the ant's head and body, attach two **cherries** and one large **grape** together with toothpicks, as shown. Push another **cherry stem** into the top of the head to create antennae. Add six **chow mein noodle** legs.



NATURE NOTE: You may see some tiny insects called *aphids* (AY-fidz) on plant stems. They suck juice from the plants for food. Some ants watch over the aphids and protect them from enemies. The ants also "milk" the aphids. Want to know more? Scan this QR code or go to nwf.org/aphids online.

RANGER RICK ADVENTURES



Stop That Drone!

STORY BY GERRY BISHOP; ART BY THE CHARACTERSHOP

Ranger Rick, Scarlett, and Boomer are enjoying an early-morning walk on Cape Cod National Seashore, in Massachusetts.

What a beautiful sunrise!

And it's really nice to be here before the crowds arrive.

A few minutes later...

Closed? What's up with that?



Let's get closer so we can read the fine print.

The kinds of birds shown here are getting rare, so the government is trying to keep them safe.



Yes—no cars, no dogs, and no people allowed!

Well, it doesn't say anything about badgers, so...

Not so fast, Boomer! We should watch the birds from here.

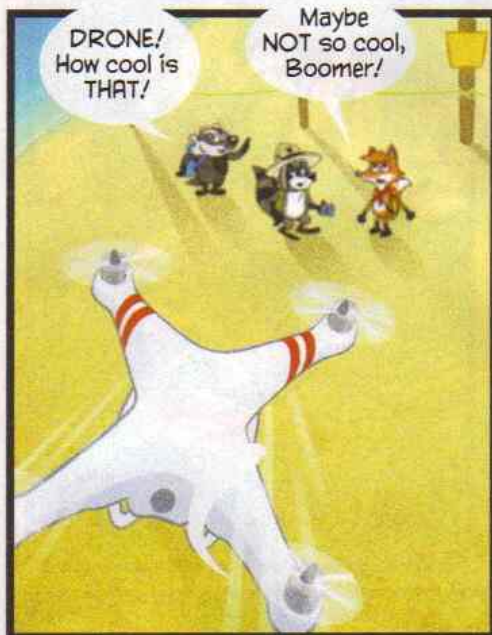
Ah—I see a piping plover, and she has two little chicks!



Here, Boom—have a look.

Do you guys hear that buzzing sound? Sounds like a monster mutant bee or a...

WHIRRRR



DRONE!
How cool is
THAT!

Maybe
NOT so cool,
Boomer!



You're right,
Scarlett. It's
heading toward the
no-go zone!



I'll bet Mom
doesn't like that
one bit.



She's
pretending
that she has a
broken wing.

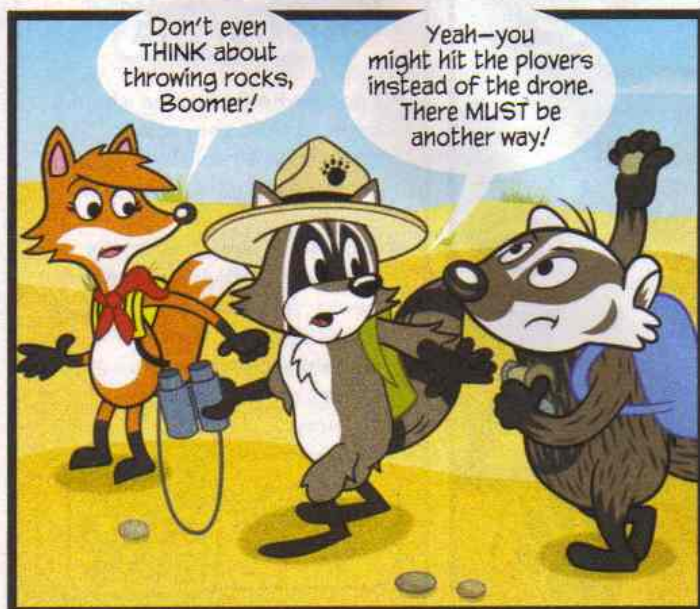
Plovers do that
to lure enemies away
from their chicks.



Well, that
trick isn't going
to work with a
drone!

Right—and,
as that sign says,
she may get so scared
that she abandons her
chicks completely!

Hmm....

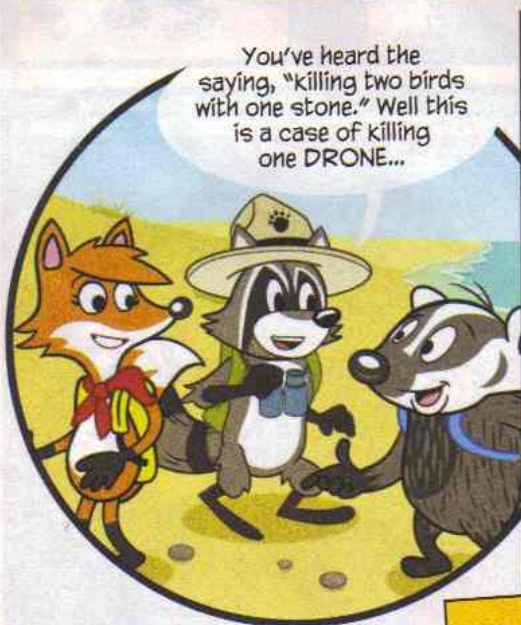
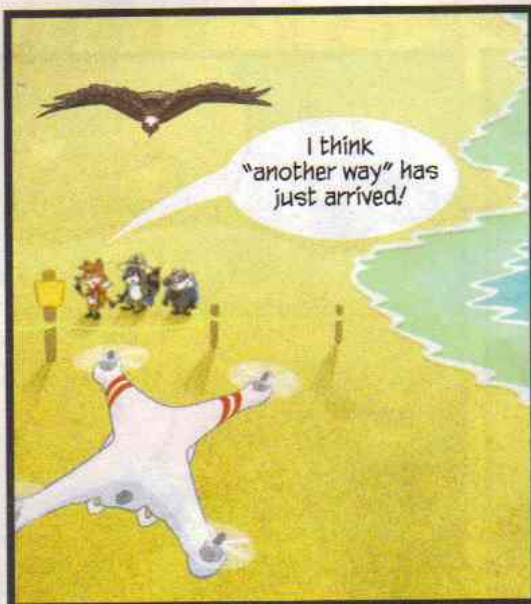


Don't even
THINK about
throwing rocks,
Boomer!

Yeah—you
might hit the plovers
instead of the drone.
There MUST be
another way!



SCREECH, SCREEEECH!



Look for an exciting new adventure next month!

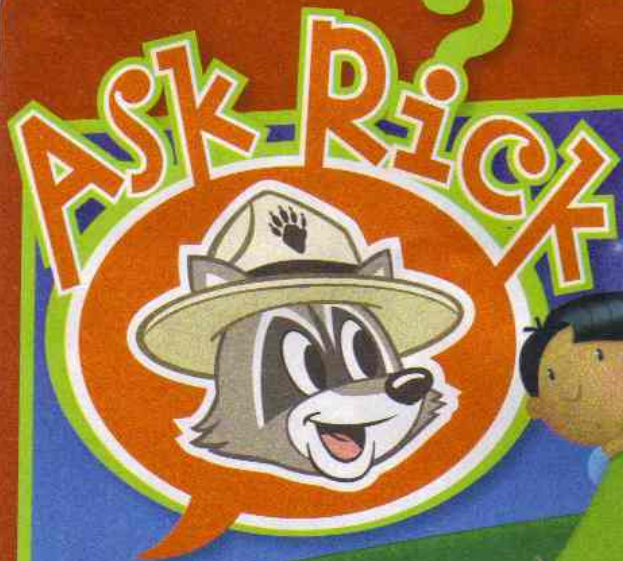


RANGER RICK'S FIELD NOTES

- People who fly drones should be sure that they're not disturbing birds or any other kinds of animals.
- Scientists aren't sure why ospreys (OSS-prayz), other hawks, and eagles sometimes attack drones. Maybe the birds see the drones as a threat or mistake them for prey.

Watch a hawk attack a drone!





Why do mosquito bites get red and itchy?

Jake M., Wisconsin

The short answer: Because that's what happens when your body fights "foreign invaders"!

And the long answer: When a mosquito sticks its long, needle-like mouthparts into your skin, it squirts in some of its saliva. The saliva keeps your blood flowing as the mosquito sucks up its meal. But your body treats that saliva as it does germs or any other "foreign invader." Special cells in the blood around the bite go into action. They give off chemicals that make your blood vessels open wider, allowing more blood to flow to the "battle-ground." More blood means more cells and chemicals to attack the invader. But that makes the area red and swollen. And those chemicals can make your skin itch like crazy.

I'm excited about going camping for the first time. But what should I do if I hear an animal outside my tent?

Zack C., Washington

One thing to keep in mind is that noises sound much bigger and scarier at night—especially when you're sleeping in a strange place. What you may think is a bear is more likely to be just a raccoon, an opossum, or even a mouse! If you hear an animal, try one of the following:

- Roll over and go back to sleep.
- Play a game with your tentmate: Guess what animal you hear. Then go back to sleep.
- Grab a flashlight, peek outside, and have a look around.
- Yell loudly to make whatever it is go away. (But then you'll have to explain why you


woke up everyone in the campsite!)

One thing you *don't* want to do is offer food to any wild animal. That would encourage it to come back again and become a big pest.

Want to discover more about camping and an awesome family camping event called the Great American Campout? Visit nwf.org/campout.

Why do you see lightning before you hear thunder?

Jamie O., Florida

Thunder is the sound that a lightning bolt makes when it blasts through the air. Lightning and thunder happen in almost the same instant. And in that instant, both the bright light and the loud sound race out in all directions. But light travels almost a million times faster than sound. So you can guess which wins the race in reaching you! 

Cotton-Top Pop

BY HANNAH SCHARDT; PHOTOS BY SUZI ESZTERHAS

**Celebrate Father's Day
with South America's
fluffy, hard-working
super dad!**



*This tamarin
dad keeps his
balance even with
two napping
babies on his
back.*

It looks as if the *cotton-top tamarin* twins in the photo **above** are pretty attached to Dad! Their tiny fingers and toes grip his fur tightly, keeping the babies secure as he perches on a branch high above the ground.

When they were born, each helpless baby weighed only a little more than a slice of bread. At first, their mom

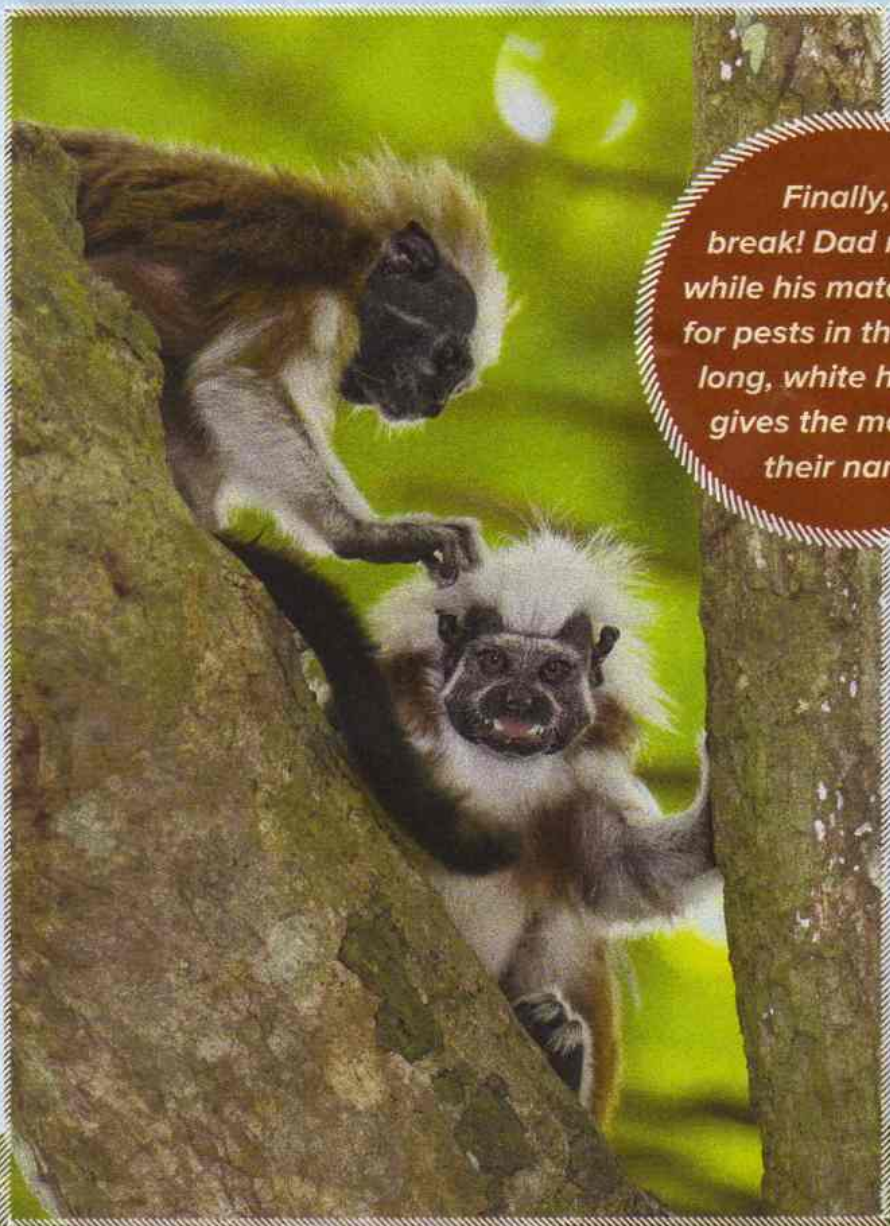
and dad stuck close together. Mom nursed the tiny babies but would turn them over to Dad whenever she needed a quick food break.

But soon, Mom started spending much of her day looking for food so her body could make enough milk for the growing twins. That left Dad in charge—with two little monkeys on his back!


Pint-Sized Primate

The cotton-top tamarin is one of the smallest monkeys in the world—about the size of a squirrel. And it lives a squirrely lifestyle, too, using its sharp, claw-like nails to scurry around in the trees of northwest Colombia's tropical forests.

The miniature monkeys live in small, tight-knit groups. In each group, only one female and one male get to mate and have babies. The rest of the group pitches in to feed, groom, and carry the babies. And who does a lot of the toting around? You guessed it: dear old Dad.



Finally, a break! Dad relaxes while his mate checks for pests in the puff of long, white hair that gives the monkeys their name.



With scrawny tails clamped tightly to their dad's body, the twins stay safely attached even while Dad is on the move.

After handing off the babies to another member of the group, Daddy Tamarin gets a chance to hang out and snack on fruit.

Treetop Snackers

Cotton-top tamarins spend nearly all their lives in trees. Up there, they find a forest feast. Topping the menu is fruit, which makes up nearly half of what they eat. The rest of their diet may not sound so scrumptious to you: insects, spiders, sap, and the occasional lizard. At first, the baby tamarins just drink Mom's milk. But once they are ready to try solid food, Dad and the other members of the group bring bits of their own meals for the twins to try.

Let's Talk

In the dense forest where they live, cotton-top tamarins are tough to spot. But they are experts at making themselves heard! Scientists have identified 38 different sounds that the monkeys use to communicate. In "tamarin talk," chirps, squeals, screams, and chatter say everything from *Help me!* to *Come quick—I found something delicious!* For now, these babies make only a few sounds—just enough to get the food and care they need. But they listen and learn. And by the time they're all grown up, they've got plenty to say—and plenty of ways to say it!

Trouble for Tamarins

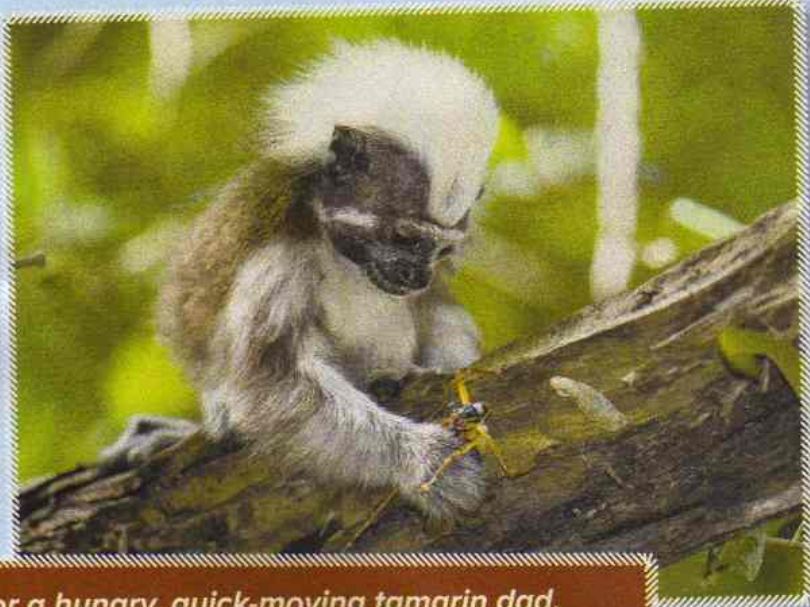
Cotton-top tamarins are among the most endangered primates in the world. They're found only in one small part of Colombia, and people are cutting



● where cotton-top tamarins live

Spotted it . . .

. . . got it!



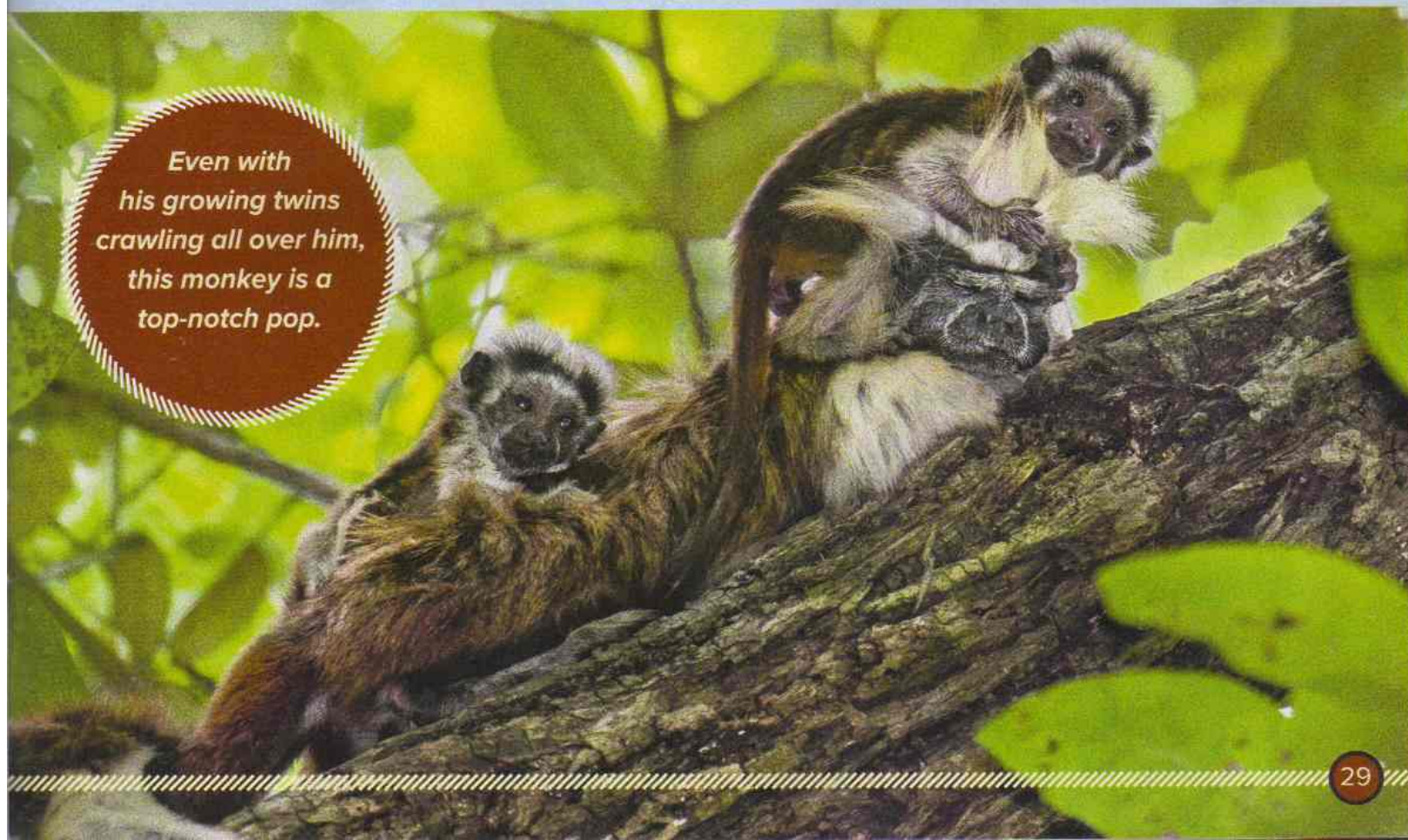
A tasty katydid is no match for a hungry, quick-moving tamarin dad.

down much of their forest home there to build roads, houses, and farms. Also, people sometimes trap the adorable monkeys to sell them as pets. But a group in Colombia called Proyecto Tití (proh-YEK-toh tee-TEE) is

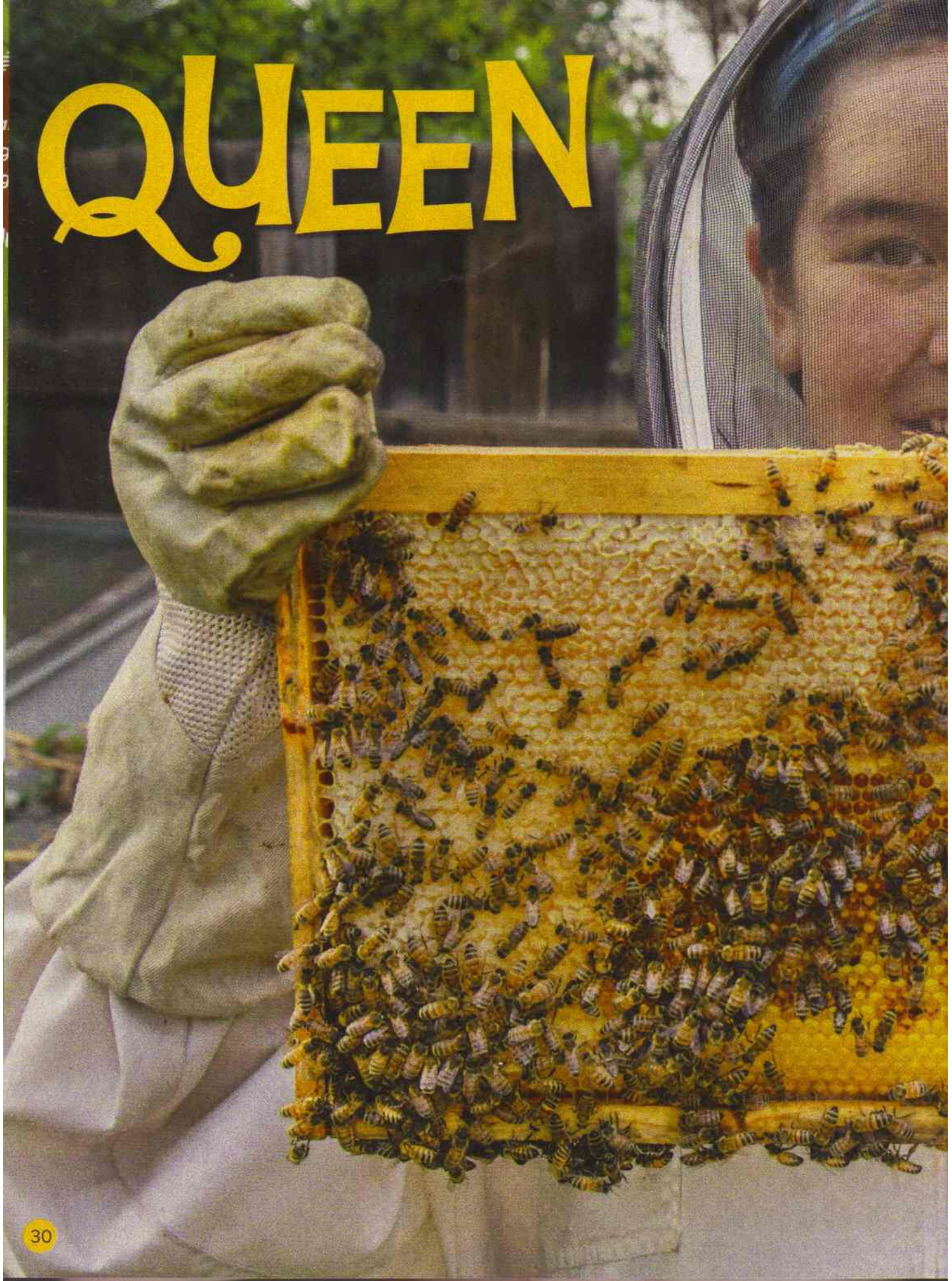
working hard to save the tamarins by preserving the forests where they live. (Tití is the local word for a tamarin.) Members of the group also visit local schools to teach kids that cotton-top tamarins are special and

should be protected. Thanks to these efforts, these baby tamarins—which get such loving care from Mom, Dad, and the rest of the tamarin clan—have a good chance to grow up safely. 🐼

Even with his growing twins crawling all over him, this monkey is a top-notch pop.



QUEEN



BEE

My name is Karen,
and I'm here to
say that bees are
totally awesome!

BY KAREN MCGAUGHEY,
AS TOLD TO ELLEN LAMBETH
PHOTOS BY JOANNA B. PINNEO

Look at the honey bees
crawling all over this thing!
It's a frame from one of my
backyard bee hives. Do I
look scared? No way! For one
thing, I'm totally protected
in my sting-proof bee suit.
Besides, I'm very careful when
handling bees. When I'm calm
and gentle, so are the bees.

As you can see, I'm actually

smiling. That's because I feel
really proud. A quick look at
this frame tells me that the
bees in my hive are healthy
and busy. Plus, I'm doing
something that not many
other people—especially
kids—get to do. And I think
that's really cool!



Meet my beekeeping family! We're all
suited up and ready to work!

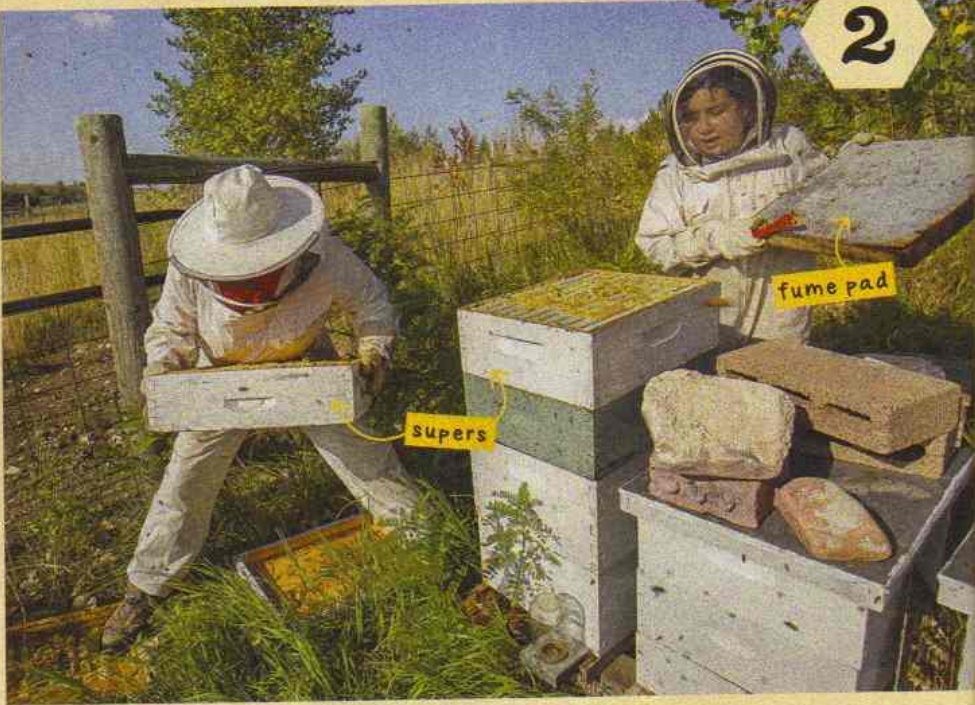
1

▲ It's honey-harvest time! First, I lift the lid to each hive and check everything out.

A FAMILY AFFAIR

I live in Colorado with my two parents, two sisters, two cats, and two dogs. I'm on the volleyball team at school, and I play French horn in my school band. But my main claim to fame is that I'm a beekeeper! In fact, my whole family is made up of beekeepers.

My dad has been one forever. When my sisters and I were young, he used to dress us up in little bee suits and let us watch him work. We'd enter our honey and beeswax in



▲ Watch your step, Mom! It's hard to see where you're going while wearing a bee suit and moving a super full of heavy honey.

contests at our local fair—and we'd win first place. By the time I was 5, I was hooked! Now I'm 14 and help my family

take care of hives all over my community. And I have three in my backyard that I take care of by myself.



◀ Dad starts pulling frames out of a super. The one I'm holding is nearly covered with wax-capped, honey-filled cells. I can't wait to collect the wax AND honey from it!

After taking the lid off each hive (see photo 1), I lay a pad on the top super. The pad has been sprinkled with a scent that the bees don't like. They move away from the smelly pad down to the bottom supers where the queen and baby bees are. Then we can grab the top ones filled with honey (2) and load them into our truck. We take them back to the "honey house" in our backyard. There, we pull out the frames (3) and start scraping off the wax (4).

BUSY BEE-SEASON

Each hive is a stack of boxes called "supers." Inside each super are frames like the one I'm holding on pages 30-31. The bees

build their wax honeycombs on the frames. They store the honey they make in little six-sided cells in the comb. By summer's end, we're ready to harvest it.

▼ A beekeeper would be lost without this handy hive tool. It's perfect for scraping off beeswax.





5

I open the lid to the spinning container and check inside (above). When there's no more honey flying out of the frames, I turn off the machine to make the spinning stop (right).



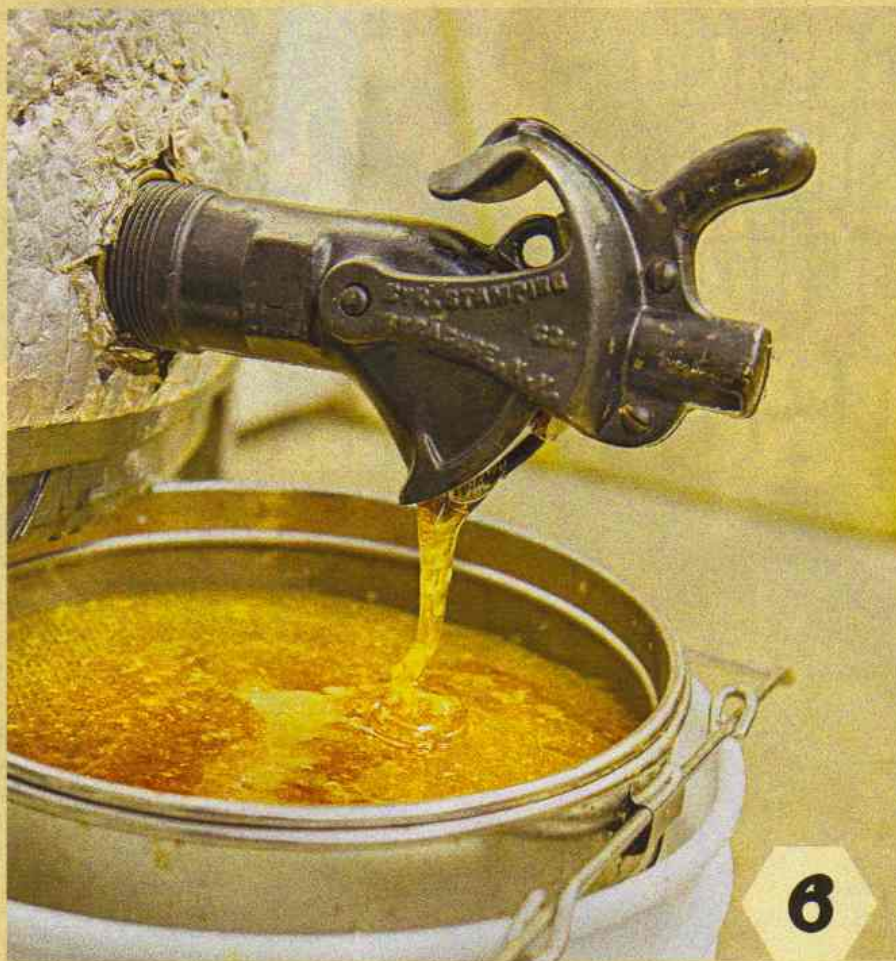
SWEET IS NEAT!

The first order of business is removing the wax caps from the honey-filled cells. We melt the wax and form it into blocks to sell. People use beeswax to make candles, lip balms, and many other products.

But the yummiest part is getting the honey out of the cells. I do that by putting the

frames in an extractor (5). This machine spins really fast, which *extracts* (removes) the honey from the frames and into the tank. (It works the same way that the spin cycle on your washing machine removes water from your clean laundry.)

At the bottom of the tank is a spigot. When I open the spigot, the honey flows through a filter and into a bucket (6). The filter catches leftover bits of wax and gunk. Then I open a spigot at the bottom of the bucket to fill up jars with pure, clean honey.



6

▲ Here it comes, out of the spigot and into a bucket: a fresh supply of honey. Yum!

BEES ON PARADE

Every summer, my family participates in a parade at our county fair. We decorate a float with our beekeeping stuff, and I get to wear my “queen bee” costume while sitting in my “flower-petal throne” (7). It’s so much fun to wave to the crowds along the streets and celebrate the importance of bees in our lives. After all, without bees, we wouldn’t have many of our favorite fruits and vegetables or beautiful flowers. As you probably know,

that’s because bees spread pollen from flower to flower, which helps these plants grow.

But lately, bees in Colorado and elsewhere have been dying by the millions. One likely culprit is crop chemicals. These kill not only pests but also good insects, including bees. I want to save bees, but I can’t do it alone. You can help by not using pesticides in your yard and by buying foods made from pesticide-free crops. Here’s my mission and my motto: I speak for the bees because they can’t speak for themselves! 🐝

▼ Hi, everybody! I love being the center of attention as “Queen Bee” on our beekeeping float in the local annual parade!

7





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MICHAEL TURCO

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A BATCH OF BATS

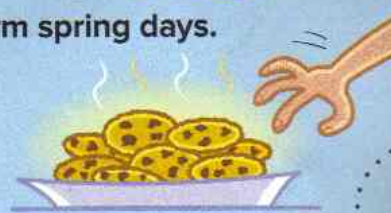


acrobat
albatross
batch
bathrobe
battle
birdbath
sunbathe
bathroom
bathtub
Batman
baton
batter

There's a **bat** in every sentence below. Choose the best "bat word" from the list below left that completes each sentence.




Careful—there are extras.

- 1 An bat flew over the ocean.
- 2 A robin splashed in the bat.
- 3 Bat rescued a man falling from a roof.
- 4 The bat hit the ball and ran to first base.
- 5 An bat walked across a tightrope.
- 6 I brush my teeth at the bat sink.
- 7 Mom baked a bat of cookies.
- 8 Snakes like to bat on warm spring days.



BAT BITES

This bat likes to eat...

 a **FIREFLY**,
 then a **MOTH**, and
 then a **MOSQUITO**.

It continues eating them in the same order: firefly, moth, mosquito, firefly, and so on. Help the bat eat its way through the puzzle from **START** to **FINISH**. Go up, down, or across, but **NOT** diagonally.





BAT GRAB GAME

Find a friend and 12 tokens for each of you
(for example, 12 pennies and 12 dimes).



HOW TO PLAY

- 1 Take turns putting a token on any square.
- 2 Keep score as you play. Each token on a bat is worth 10 points, and 3 tokens in a row are worth 10 points.
- 3 When you get 3 in a row, remove those tokens and use them again.
- 4 Continue until one player is all out of tokens.
(Or set a time limit, if you prefer.)



BALL PARK RIDDLE

To solve the riddle, first
crack the menu code.
Then unscramble
the words.

Menu



Bat boy

Fly ball!

Why is nighttime the best time for baseball?



ALL-AMERICAN BATS

This list includes just some of the 45 kinds of bats found in the United States.

Circle each one in the word search (blue part of name only).

B P A L L I D X Y U M A
I Y Y E L L O W X A A C
D N R Z C D E G N I R F
G E D A K E V E N I N G
H P V I O S P O T T E D
D E R I A H R E V L I S
E D E U G N O T G N O L
D E S O N F A E L O L M
E T G H O S T F A C E D
R A D E R N R E T S E W
A B I G B R O W N N O P
E Q R T E L O N I M E S

BIG BROWN BAT
BIG FREE-TAILED BAT
CAVE BAT
EVENING BAT
FRINGED BAT
GRAY BAT
HOARY BAT
INDIANA BAT
LEAF-NOSED BAT
LONG-TONGUED BAT
LONG-EARED BAT
PALLID BAT
SEMINOLE BAT
SILVER-HAIRED BAT
SPOTTED BAT
WESTERN RED BAT
YELLOW BAT
YUMA BAT

BONUS

Find 10 uncircled letters in a row to discover the name of this mystery bat.

AMERICAN League



Nickname "Casper"

ANSWERS

Way to go!

BONUS: ghostfaced bat

B P A L L I D X Y U M A
I Y Y E L L O W X A A C
D N R Z C D E G N I R F
G E D A K E V E N I N G
H P V I O S P O T T E D
D E R I A H R E V L I S
E D E U G N O T G N O L
D E S O N F A E L O L M
E T G H O S T F A C E D
R A D E R N R E T S E W
A B I G B R O W N N O P
E Q R T E L O N I M E S

All American Bats:

Ball Park Riddle: Bats sleep during the day.



A Batch of Bats: 1-albatross, 2-bird bath, 3-Batman, 4-batter, 5-acrobat, 6-bathroom, 7-batch, 8-sunbathe

Bat Bites:



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WATCH IT!

WELCOME TO
MY ADORABLE
ADOBE ABODE!